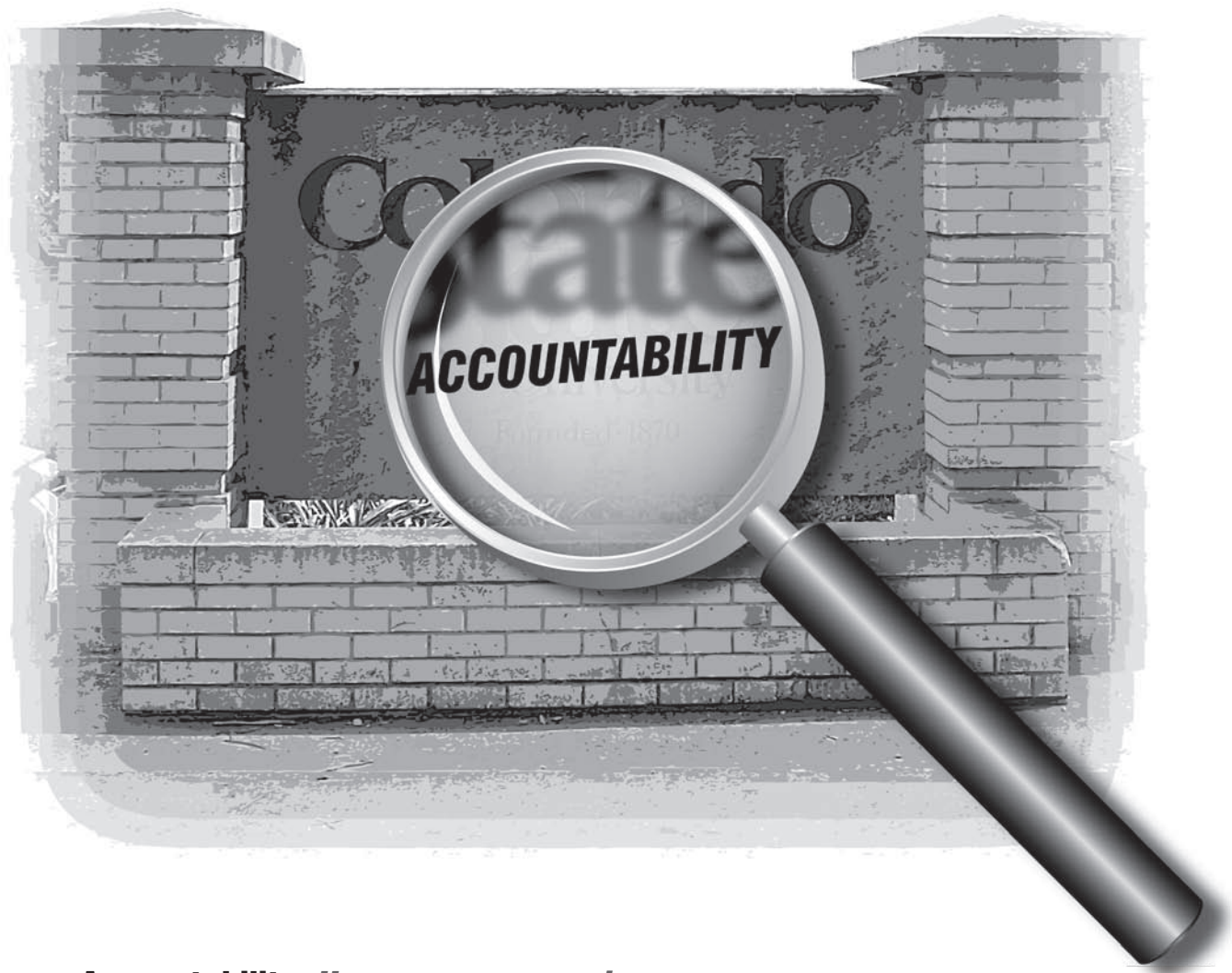


# COMMENT **Quarterly**

*Addressing the state, national, and global challenges affecting Colorado State University*

FALL 2007  
ISSUE 2, VOL. 1



***Accountability: How are we assessing institutional performance?***

***ALSO INSIDE:***

**New Supercluster enterprise launched  
CSU sets research-funding records  
New tours highlight University's 'treasures'**

**Colorado  
State  
University**



*Inspired by its land-grant heritage, Colorado State University is committed to excellence, setting the standard for public research universities in teaching, research, service, and extension for the benefit of the citizens of Colorado, the United States, and the world.*

Dear Colleagues:

Colorado State University began this academic year with a round of good news – the launch of our newest Supercluster enterprise, outstanding freshman enrollment numbers, and our continued ranking in the top tier of *U.S. News and World Report*'s "Best Colleges and Universities." Clearly, Colorado State has solidified its reputation as a major international research university and continues to serve proudly in its role as the state's land-grant institution.

Our mission as one of America's great public research universities is apparent in the breadth and relevance of our research, in our outreach throughout Colorado and around the world, and in the quality of education our students receive. Central to this mission is our obligation to provide qualified students with access to all the opportunities afforded by a research university education. This commitment to statewide access with success will continue to be a priority for Colorado State this year, as we implement an ambitious new retention plan. It will also continue to be a key focus of my ongoing discussions at the state level regarding the need for a funding model for higher education that aligns with state goals and supports the state's long-term economic health.

I am greatly encouraged that, in recent months, state leaders have been talking seriously about funding solutions for higher education. Colorado's per-student support for higher education is among the lowest in the nation, and this level of funding presents a significant long-term threat to Colorado's youth and to our state's future economic prosperity and quality of life.

The "public model" of higher education funding depends on significant state funding in addition to student tuition costs. These state and tuition resources are essential to address three particular challenges for public institutions. First, our research universities, especially, must compete in a global market for faculty and talented students. Each year, rising costs of labor along with other increases in expenses result in a mandatory need to provide additional revenue. Prior to this past year, funding from the state and tuition increases has barely allowed Colorado's universities to address even this basic level of increased expense.

The second area for which funding is essential is raising the quality of our universities. This past year, as a result of the Governor and Legislature's support, there was additional funding from the state and tuition revenue to raise the quality of our universities through the addition of new faculty positions and investment in targeted quality improvements. Assuring a substantial, long-term source for additional faculty, counselors, and advisors – along with support for programmatic improvements to areas like the quality of the undergraduate experience – are essential.

Finally, there is a need to provide resources for addressing access with success. Issues of student access, success, financial aid, and tuition pricing are intertwined and underlie Colorado's capacity to engage all its citizens, including working-class families. But providing for access with success requires additional sources of revenue for scholarships or tuition discounting and for programmatic support for these students during their undergraduate experience.

These issues – global competitiveness, quality improvements, and access with success – will continue to be central to our discussions at the state level this year as we work to advance Colorado State and its mission to serve Colorado. Here on campus, our focus will continue to be on excellence in education, research, and outreach, with special attention to accountability and transparency in our operations, telling the university's story more effectively through enhanced marketing and public relations activities, and continued strengthening of partnerships in our community, state, and worldwide in support of enhanced economic prosperity and quality of life.

Best wishes,

Larry Edward Penley  
President

# COMMENT **Quarterly**

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**Larry Edward Penley**, President  
Colorado State University System Chancellor

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## ► VISION AND STRATEGIES

**Providing consumer information on education**

The burden of paying for an undergraduate education increasingly falls on students or their parents, says the National Association of State Universities and Land-Grant Colleges. The association's preliminary report, "Elements of Accountability for Public Universities and Colleges," recommends universities provide clear and concise answers to consumers' questions so they can compare institutions by the measures most relevant to them. Providing such information should improve the fit between student and university, resulting in greater satisfaction and improved educational success for the student. Improved fit should also reduce student transfers among four-year colleges and ultimately reduce the cost of education to the student. Information on costs, degree offerings, living arrangements, graduate placement statistics, graduation rates, transfer rates, and employment should enable prospective students to compare universities of comparable admissions selectivity.

**Prospective students, current students, and their parents.** Universities should be able to answer consumers' questions such as: How much will it cost to go to the institution? Are there costs beyond the required base tuition? What kind of jobs

*continued on page 5*

**Accountability: How are we assessing institutional performance?**

Universities have long worked to dispel an elitist ivory-tower image and effectively convey their impact on the greater good. Now Colorado State and other institutions are responding to constituents who are asking universities to go beyond broad discussions of good deeds and disclose to the public how they operate, how they measure success, and how well they achieve their goals for student learning.

In response to these calls for accountability, the National Commission on Accountability in Higher Education released a report in 2005 that recommended an ongoing and vigorous dialogue to address the educational needs of the American people, issuing a series of recommendations designed to improve student preparation, public investment in educational priorities, teaching and research, cost-effectiveness, and the availability of data.

Similarly, Colorado State University President Larry Edward Penley has been pushing for transparent accountability at CSU, charging members of the President's Cabinet a year ago to devise a well-rounded, readily reportable system of accountability measures for the campus that could be easily accessed by students and parents.

Penley's challenge to the CSU campus is in line with a movement nationally among colleges and universities. The National Association of State Universities and Land-Grant Colleges has recently proposed that colleges and universities report a voluntary set of accountability measures that would assess the added educational value an institution brings to its students. Measures such as consumer data, student engagement data, and outcomes will help stakeholders better evaluate undergraduate student learning, NASULGC contends.

NASULGC urges universities to use accountability data to assess their own past performance and to weigh their performance with comparable universities. The association's preliminary report, "Elements of Accountability for Public Universities and Colleges," does not propose a one-size-fits-all national system for record-keeping or suggest what methods should be used to measure student learning. Rather, the proposal seeks to improve the ability to educate undergraduate students.

**Making a mark**

"Colorado State is one of the first institutions nationally to make accountability information available to the public, says Robin Brown, CSU's vice president for enrollment and access. In March, the University unveiled its accountability measures for undergraduate education. The information, Brown says, will help prospective students and their parents determine if CSU is the university that best fits their needs.

The first set of measures, posted on the CSU Admissions website, includes retention and graduation rates, diverse student success, admission requirements, costs, class sizes, and campus crime information. Prospective students and their parents can compare the CSU statistics with those of other universities.

The University will eventually post 50 variables such as scholarships, study abroad programs, accessibility, housing options, job availability, employment after graduation, and University rankings, says Brown.

"We want students and their parents to see the value of a degree from CSU. Once we admit a student our goal then is to improve student learning," notes Brown.

**Improving student learning**

Colorado State also has collected data from students to measure outcomes, says Blanche Hughes, CSU's vice president for student affairs. Since 2000, the University has implemented the National Survey of Student Engagement, which collects student data from four-year institutions to provide national benchmark data.

“The NSSE assesses such variables as involvement in college activities, satisfaction with the college experience, and community service and volunteerism, which enables universities to compare student perceptions about the total campus environment,” says Hughes.

Student participation in various activities is a meaningful proxy for the quality of the educational experience, note NSSE officials. In 2005, more than 245,000 first-year and senior students from a sample of 529 universities responded to the survey. This data ultimately will allow faculty and staff to make alterations in campus and classroom environments to create more effective learning experiences.


“We’re collecting information that will make us better as an institution,” says Brown. “We’re letting the consumer know where we are and where we want to go as a university.”

CSU this year decided to also move forward with participation in the Collegiate Learning Assessment, which provides information on student learning as measured by key variables of educational effectiveness that indicate the extent to which students are developing higher-order critical thinking skills. The CLA can provide a comparative analysis of freshmen and seniors or a four-year longitudinal analysis of a cohort of seniors and freshmen, says Alan Lamborn, vice provost for undergraduate affairs at Colorado State. CSU will do a longitudinal analysis based on a subset of colleges each year, beginning with engineering and business this year.

“This approach will enable us to track how well students in different programs do over time. We are also hoping to connect these students with our alumni office prior to graduation so they will be willing to be tracked after they graduate,” says Lamborn.

The Collegiate Learning Assessment provides the opportunity to drill down to the college level to analyze learning outcomes, Lamborn says. “The only way to teach to this test is to teach students how to think critically and express their thoughts systematically and effectively. The Collegiate Learning Assessments are graded on the quality of student arguments and thus can provide useful information on what institutions emphasize and value.”

In developing its plan for implementation of the CLA, the University is exploring incentives to encourage student participation because of the time required and the need to engage a sample of students over four years. Lamborn says options currently being considered include granting priority registration to participants, along with other types of incentives. He is working with a team of students, faculty, and administrators on plans for how best to administer and promote the new assessment vehicle.

CSU’s push to get ahead of the national call for transparency and accountability will serve parents and students well in the long run, Brown notes. “It is incumbent on university presidents to agree on national accountability measures,” says Brown. “President Penley wants CSU to take the lead nationally. We are a public institution, and the public has every right to know about student outcomes. Never before have institutions of higher education worked to collectively communicate to the public our value. Now we can.” 

*continued from page 4*

do graduates get? What are the starting salaries of graduates? How much does it cost to live in the residence hall? How long will it really take to earn a degree? How many students fail to receive a degree? Are student jobs available on campus?

**Faculty and campus support staff.** Faculty and staff need feedback about the campus climate and their success in educating students to benchmark practices against those in comparable universities. Campus learning climate data obtained from the National Survey of Student Engagement help faculty and staff members know if their students are being expected to read, write, and participate in class discussions comparable to peer institutions. In a controlled environment, change can be introduced and the impact of that change evaluated.

**Public policy-makers and funders of higher education.** Legislators, boards of trustees, foundation board members, and alumni are requesting information access and asking who is receiving the benefits and how much education is occurring. **cq**

*Source: The National Association of State Universities and Land-Grant Colleges, “Elements of Accountability for Public Universities and Colleges”*

## Overview of CSU’s approach to National Survey of Student Engagement

Questions regarding this overview may be directed to Patrick J. Burns, vice president for Information Technology, [Patrick.Burns@colostate.edu](mailto:Patrick.Burns@colostate.edu), (970) 491-5778.

The National Survey of Student Engagement (NSSE) is administered online to freshmen and senior students, with questions in the five areas of “Benchmarks of Effective Educational Practice”: 1) Level of Academic Challenge, 2) Active and Collaborative Learning, 3) Student-Faculty Interaction, 4) Enriching Educational Experiences, and 5) Supportive Campus Environment. Absolute values of scores from CSU are compared to

### What others are saying about accountability

In addition to accountability proposals offered by the National Commission on Accountability in Higher Education and the National Association of State Universities and Land-Grant Colleges, other organizations have weighed in on the issue.

The **National Association of Independent Colleges and Universities** conducted a survey of 1,000 adults to determine public attitudes toward a federal system for tracking the academic, financial aid, and enrollment information of college students in a central database. Sixty-eight percent of the respondents thought that enough information is already collected at the university level. Sixty percent thought that collecting individual student data is costly, intrusive, and has no application to policy issues.

The **Education Testing Service** recently released a report that recommends a broad national system to measure student learning and educational effectiveness at two- and four-year institutions. "A Culture of Evidence: Postsecondary Assessment and Learning Outcomes" calls for measuring workplace readiness and general skills; discipline-specific knowledge; soft skills such as teamwork,

*continued on page 7*

scores from peer institutions. "Value added" can be determined from differencing the senior and freshmen scores, and this difference can also be compared to peer institutions.

The NSSE is conducted annually as an element of CSU's Voluntary Accountability activity, in which many institutions are participating. As the NSSE is conducted every year, trends over time should allow continuous improvement to occur. Target populations for the NSSE are all eligible freshmen and all eligible senior students, in an effort to obtain as large a sample as possible. Ideally, results at the greatest resolution, individual departments, would facilitate continuous improvement as a department is the "natural" group to effect change through actions that are under the auspices of a cohesive academic unit. However, if sample sizes are insufficient to yield statistically meaningful results for a department, departments may be lumped together with other similar departments, and may even be aggregated at the college level.

Two areas of particular emphasis for academic improvement are the Level of Academic Challenge and Active and Collaborative Learning categories. Greater intellectual development should be positively correlated with higher scores in each of these areas. Data in each of these areas will be examined in detail, down to the level of each individual question in an effort to distill maximum information from the data. Units where performance in a relative sense is lower than others at CSU may need to enhance the intellectual level of instruction, may need to increase the number and length of assignments, administer more quizzes and tests, ask more challenging questions, and in general, increase expectations of their students. Redirecting (optimizing) faculty teaching loads may also be appropriate.

In addition to the quantitative data returned from the NSSE, qualitative data will also be gathered to buttress our efforts for continuous improvement. In this regard, every year, two focus groups of students who participated in the NSSE will be identified and interviewed. One focus group will consist of students who were freshmen when they took the survey. The other focus group will consist of students who were seniors when they took the survey, and are still enrolled at Colorado State University. Feedback from these groups will support our goal of continuous improvement by allowing exploration of issues in greater detail, as well as to cull forth possible solutions to the issues.

Last academic year (NSSE administered in spring semester 2007) was the first year that we over sampled (i.e. targeted all eligible students), and thus expect a sufficient number of results back to yield statistically meaningful results when we partition the data to subunits (colleges and departments). We have just received the NSSE data from last year's survey, and are developing ways to analyze data sufficiency as we partition the data into ever higher resolution, for example, into individual colleges and hopefully in some cases, even departments. This will require a detailed investigation, including examining plots of data for all 60+ academic departments at CSU. We anticipate obtaining results during this fall semester that we can use to present to academic units for their information and action to effect positive change.

## Overview of CSU's approach to Collegiate Learning Assessment

*Questions regarding this overview may be directed to Alan Lamborn, vice provost for Undergraduate Affairs, Alan.Lamborn@Colostate.edu, (970) 491-6614, or Paul Thayer, assistant vice president for Student Affairs and assistant to the vice provost for Undergraduate Affairs, Paul.Thayer@ColoState.edu, (970) 491-5312.*

The Collegiate Learning Assessment, a product of the Council for Aid to Education, is intended to measure higher-order skills of college students. The assessment is constructed in such a way as to measure not only the student's performance of these skills at particular points in their career, but also the contribution of their educational experience toward the development of those skills.


The CLA attempts a direct assessment of learning. The skills measured include analytical reasoning, critical thinking, problem solving, and written expression. These are skills that cut across all programs of study and are needed in later life. Students take the assessment in a three-hour session in a campus computer lab environment with trained proctors. Students demonstrate their skills through written responses to two kinds of tasks: Performance Tasks, in which they complete a “real-life” activity (such as preparing a memo or policy recommendation) by using a series of documents that must be reviewed and evaluated, and Analytic Writing Tasks, which evaluate students’ ability to articulate complex ideas, examine claims and evidence, support ideas with relevant reasons and examples, sustain a coherent discussion, and use standard written English.

Colorado State has selected the longitudinal study option at a cost of \$28,000 per cohort. (A cross-sectional study is the other, less expensive, option, but provides less persuasive data.) The assessment is conducted for new students in their initial semester of enrollment. Those who participate in that first semester are subsequently assessed in their fourth semester, and again finally in their eighth semester.

The CLA gauges students’ performance in relation to that which would be expected, adjusting for their entering ability. The proxy representation of “entering academic ability” is the student’s ACT or SAT score. Performance scores of all participating students are aggregated to produce measures of institutional performance. The participating students each receive feedback expressed in terms of whether they performed at a level that would be expected after taking into account their entering academic abilities, or whether they performed at a level greater or less than expected. The institution receives a report that summarizes students’ performance, compares that performance in relation to other participating institutions, and estimates the value added contributed by the institution. The value added dimension is expressed in terms of whether the students performed on the average at a level that would be expected given students’ entering academic abilities (ACT or SAT score), or greater or less than would be expected.

Colorado State has made the choice to conduct the assessment at the level of colleges, since the colleges and their departments are most directly responsible for curriculum and instruction. The first cohort will include students in the Colleges of Business and Engineering. In order to achieve a target participation level of 300 students, all new freshman students in those two colleges will be included in the sample. Because students’ scores are determined by their actual performance, it is permissible for the institution to contact students directly to encourage their participation. Students are likely to find the time and effort involved in the assessment quite demanding, and so several incentives will be offered for completion of the CLA. These incentives include cash (\$30 on the student’s Convenience Account), priority registration for classes, and certification of their participation and performance.

In every succeeding year, students from another two colleges will be included in the assessment. Once the eight colleges have all been addressed, students in intra-University categories will be assessed, and by that time all major units will have been included.

The aim of the assessment is to collect data that can be used in directing efforts to improve the quality of the educational experience. The institution will receive a report describing student performance in the aggregate. In addition, the University will have access to raw data that will allow partitioning of data by college, and in some cases by major. Where numbers permit, analysis will also be possible on the level of other subgroups, such as ethnic/racial group, gender, first generation status, etc. Where there are units that appear to be producing superior results with students, further investigation will be conducted to identify best practices that can be shared with other units. Where evidence points to less satisfactory outcomes, the data will be used as feedback to colleges and departments to prompt their efforts at enriching their instructional strategies. It may also be desired to conduct focus groups among outlier groups, to achieve a more complete understanding of the experiences in and out of the classroom that produce the most effective learning. 

*continued from page 7*

communications and creativity; and student engagement. ETS recommends a number of national assessments, including its own GRE and MAPP tests, to help establish a systematic, data-driven approach to measuring student learning. ETS proposes 18 possible measures and suggests the creation of a national expert panel to review the assessments and determine which are appropriate.

The **American Federation of Teachers** stated that a standardized model for measuring student outcomes is not appropriate for the U.S. system of higher education. Imposing a single test on the broad range of students at multiple institutions and working within multiple disciplines with multiple goals for their education would lead to unreliable, invalid results, says the federation in a statement. “Ensuring quality in higher education system does not mean adding more federal direction and control to the evaluation of higher education institutions,” notes the AFT, which supports a voluntary accreditation system with faculty involvement in shaping what is monitored and how. **CQ**

## President gives fall address

President Larry Edward Penley gave his annual Fall Address to the University Sept. 6. He highlighted major achievements of the past year, including faculty and student successes, record-breaking research numbers, new facilities, the launch of the Superclusters, the University's continued ranking in the top tier of *U.S. News and World Report's* list of America's Best Colleges and Universities, and the growing awareness nationwide of the University's quality and reputation. The full text of Penley's address is available online at [www.president.colostate.edu](http://www.president.colostate.edu), in the "Spotlight" section. 

## New Supercluster enterprise launched

Colorado State last month announced its second Supercluster, cancer research and treatment, and NeoTREN, the corresponding business enterprise that will speed the transition of life-saving cancer research from the academic world to the global marketplace.

"By focusing our resources and providing improved avenues for the University's brilliant minds in cancer research to work together, we optimize our ability to make a difference on a level that reaches individuals, families, communities, and countries that struggle with this relentless disease," said Colorado State President Larry Edward Penley.

The announcement follows the February launch of the University's first Supercluster and enterprise, MicroRx, which is focused on infectious disease research. A third academic Supercluster, in clean energy, has also been launched, although its enterprise arm is still in development. CSU's Superclusters connect academic researchers, economists, and business experts to encourage collaboration and bridge the vastly different worlds of business and academia.

### Partnering to prevent cancer

The cancer Supercluster, a collaboration of the CSU colleges of Veterinary Medicine and Biomedical Sciences, Natural Sciences, Applied Human Sciences, Agricultural Sciences, and Engineering, builds on the University's 35 years of excellence in cancer research.

Colorado State in August announced Dr. Terry Opgenorth as the chief operating officer for NeoTREN. He will also serve as the chief operating officer of MicroRx. Opgenorth joins the University after 20 years with Abbott Laboratories' Global Pharmaceutical Research and Development, where he served as divisional vice president of drug discovery overseeing antiviral research, metabolic disease research, and target-lead discovery research.


The academic side of the Supercluster will be led by world-renowned oncologist and surgeon Dr. Stephen Withrow, director of CSU's internationally esteemed Animal Cancer Center. Dr. Robert Ullrich, current director of research in oncology for the University's Animal Cancer Center and a professor in the Department of Environmental and Radiological Health Sciences, will serve as director of research.

"Cancer continues to be one of the most devastating diseases on the globe, with a high cost to life and quality of life," said Tony Frank, CSU provost and senior vice president. "The University's multi-disciplinary programs in cancer research, along with numerous partnerships with the world's top cancer research centers, position the University to prevent cancer around the world."

### Streamlining research and technology

Technology transfer at research universities guides scientists through the process of patenting and the complexities encountered in delivering discoveries to the global market. But Colorado State's Superclusters model is unique with its multidisciplinary structure that enables groundbreaking research to move to market more quickly. Business leaders in the biomedical field have welcomed the Superclusters model, which effectively streamlines access to new research and technology.



The Supercluster's chief operating officer will focus on forging business alliances and developing new opportunities for the results of that research, while the technology transfer specialist will seek opportunities for patents, licenses, and startups. The team also will seek private equity investors for new business opportunities. 

## New tour program highlights University's 'treasures'

Cancer cures, successful aging, and how to be a "Ram for a Day" – not the typical lexicon of a prestigious research university. Rather, these titles represent some of the creative tours available to the public during a RamTracks excursion at Colorado State.

RamTracks, launching this fall, is a new premier tour series developed by the Office of the President to showcase the University's prestigious programs and faculty, expand its community outreach, and connect with key target audiences. It is an outreach approach that differs from traditional public relations efforts by offering a more hands-on opportunity for members of the public to learn about University programs and visit with faculty members about their scholarship.

The Colorado State University Office of Admissions will continue to provide campus tours for prospective students. RamTracks, on the other hand, gears its tours to such diverse audiences as civic leaders, legislators, international delegations, community groups, industry teams, retired faculty and staff, University guests, high school teachers and counselors, and individuals interested in learning more about Colorado State. RamTracks tours will focus on thematic areas that may cross college and department boundaries, providing opportunities for people outside the University to learn about current research and the different ways CSU is addressing the global challenges of the 21st century.

### Showcasing University programs

"Our goal is to create greater awareness of Colorado State and the impact of higher education on the state's economy and quality of life," said Cara Neth, director of Presidential and Administrative Communications. "We also want to provide Colorado taxpayers – the people who support our University – with more opportunity to learn about the important research and scholarship generated on our campus."

Colorado State previously had no standardized method for the public to observe its groundbreaking research programs or interact firsthand with students and faculty. A professionally managed and marketed tour program, designed to reflect the University's strategic direction and highlight institutional "treasures," supports Colorado State's long-term marketing, public relations, fundraising, and admissions goals, noted Neth. The program aims to increase awareness of the critical research on campus and highlight CSU's efforts to train the next generation of teachers, scholars, scientists, and engineers, said Neth. "Essentially, we are inviting the public on campus to personally experience the good things happening at Colorado State."

Tour content is being developed in conjunction with academic deans and faculty members to highlight CSU's exceptional programs, exemplify the University's commitment to addressing the great global challenges, and offer a certain "wow" factor for the layperson. All of the colleges are involved in developing the tour schedule, Neth said, and the difficulty is in narrowing the number of ideas to a year's worth of programs.

### Uniquely Colorado State

Since arriving at Colorado State University four years ago, President Larry Edward Penley has urged the creation of a tour program similar to Arizona State University's popular and long-running Sneaker Tours. His vision has come to fruition with a tour program unique to Colorado State.


### Ram tracking: Tour logistics

- **Tours will be approximately 2½ hours long.**
- **Small groups of six to 12 participants visit Colorado State University research laboratories and learning facilities, meet professors and students, ask questions, and participate in discussions.**
- **Tours are designed primarily as walking tours but occasionally involve van transportation to specific sites such as the Foothills Campus, Agricultural Research Development and Educational Center, South Campus, and the Engines and Energy Conversion Laboratory.**
- **Guests are greeted by the RamTracks coordinator and student volunteers who offer an introduction, outline the agenda, and guide the group to and from each segment of the tour.**
- **Individual tour segments are led by academic faculty and students affiliated with the spotlighted programs.**
- **The emphasis throughout the tour is on providing a memorable, professional, visitor-friendly experience. *ca***

“Given the budget challenges facing our campus, we didn’t have the resources to create an extravagant and abundantly staffed program,” Neth said. “Instead, we’re focused on developing intimate, engaging, and meaningful experiences for visitors that capture some of the intellectual excitement and energy of our campus. In the long run, RamTracks has the potential for much greater impact than some of our more traditional promotional efforts because it’s about sharing knowledge one-on-one and letting people hear directly from faculty about their work. Ultimately, the success of RamTracks will hinge entirely on the involvement of faculty and the academic colleges and departments.”

Tours will be repeated only once or twice a year, will typically run 2½ hours, and will accommodate six to 12 people. RamTracks coordinator Stacy Dotson, who began her post Aug. 15, will work closely with faculty and the academic colleges to maximize the program’s positive impact and minimize any burden on individual faculty and departments. Dotson piloted the program in September with “dress rehearsal” tours for the campus community.

Dotson will coordinate all aspects of the tours, including developing the RamTracks website, which will outline tour schedules, speakers, and locations. Potential tour-takers also will be able to register for tours online.

For more information contact Stacy Dotson at (970) 491-3858 or [Stacy.Dotson@colostate.edu](mailto:Stacy.Dotson@colostate.edu). 

## ► TRANSFORMATIONS

### Last year’s successes move University forward

In the last academic year, the campus community worked together to address a range of complex issues including educational access, accountability, funding, student retention, outreach, and collaboration.


“Faculty Council, the Classified Personnel Council, and the Administrative Professional Council provided exemplary leadership in representing and advancing the interests of their constituents and the University,” CSU President Larry Edward Penley noted.

CSU faculty and staff also worked diligently to draft plans for UniverCity Connections task committees and provide recommendations for gt Pathways, the statewide guaranteed student transfer program.

Other accomplishments include the creation of the Institute for Learning and Teaching to improve the quality of undergraduate education and the appointment of key University leaders including Joseph O’Leary as dean of the Warner College of Natural Resources, Bill Farland as vice president for research, Blanche Hughes as vice president for student affairs, and Pat Burns as vice president for information technology.

Additionally, faculty and staff:

- developed a long-term vision and plan for international relations and enhanced international partnerships;
- successfully launched two Supercluster enterprises in infectious disease and cancer and a third academic Supercluster in clean energy, drawing considerable attention from universities in the United States, China, and Europe who are watching the progress of this groundbreaking initiative;
- implemented the initial phase of a comprehensive, long-term retention plan focused on the quality of the undergraduate experience;

- improved retention and graduation rates – for first-time, full-time, degree-seeking freshmen, CSU this year achieved a record 65 percent six-year graduation rate; the five-year minority student persistence rate (those graduated or still enrolled after 5 years) hit a record high of 62.4 percent, the first time this rate has reached or exceeded 60 percent; the gap between minority and non-minority persistence as 4.3 percentage points (66.7 percent vs. 62.4 percent);
- strengthened the institution’s commitment to sustainability with the establishment of a sustainability committee and the launch of the wind farm project;
- achieved record levels of research funding – \$296 million for Fiscal Year 2007 – surpassing the University of Colorado-Boulder for the first time (see “CSU sets research-funding records” story on page 25); and
- enhanced transparency and accountability with expansion of the National Survey for Student Engagement, the development of a plan for assessing learning through the College Learning Assessment, and the creation of a new accountability website geared to prospective parents and students. 

## Incoming freshmen receive *For-Ever-Green*

### ***Book of traditions to become a tradition***

Although the required wearing of freshman beanies went out in the 1960s, incoming students this fall were handed a new Colorado State University tradition: an 80-page, just-off-the-press book about the University’s history of, well, traditions.

Colorado State has published *For-Ever-Green*, a first-of-its-kind chronicle of more than 135 years of enduring and endearing University traditions. The collection includes milestones, campus legends and twice-told tales, lost traditions, and official traditions.

*For-Ever-Green* will be distributed to each incoming freshman class, whose members will eventually establish their own traditions for possible inclusion in subsequent editions.

The volume catalogs what it means to be a Ram, chronicling the rich traditions of Colorado State from its origins in 1870 as the Agricultural College of Colorado to today’s standing as a world-class research institution. In the guide, readers will find the CSU alma mater and the fight song and learn about the burning of Old Main in 1970 and the flood of 1997, among other facts.

The collection was written and produced through the collaborative efforts of the President’s Office, Communications and Creative Services, Athletics, the Alumni Association, and Student Affairs. Publications coordinator Kathy Phifer, who managed the *For-Ever-Green* production team, described the book as “a work in progress” that will continue to evolve through future editions as people share their own experiences, memories, and traditions.

*For-Ever-Green* is available at the University bookstore while supplies last. 

## Collaboration creates sustainable connections

A collaboration that is making a stronger and sustainable connection among Colorado State University, Old Town, and the Poudre River began with a bike ride last summer. As Colorado State University President Larry Penley and Fort Collins City Manager Darin Atteberry pedaled the city’s greenbelts, they discussed how a partnership between the University and the city could positively affect the future of Fort Collins.

That rolling conversation evolved into UniverCity Connections, a 130-citizen-strong, multi-organization initiative that identified new, innovative ways to link community resources. The Community Foundation of Northern Colorado sponsored the project with assistance from

## Colorado State University traditions, past and present

*Entries from For-Ever-Green*

### **Beanies**

Freshmen wore the freshman beanie their first semester at Colorado State University. The tradition began in 1914 and lasted until the late 1960s. If freshmen were caught without their beanies, they could be thrown in a horse trough – or worse. Freshmen wore the beanies until the “Rite of Cane” competition at the end of fall semester. If the freshman class beat the upperclassmen, their beanie days were over. If not, they were in for another beanie-wearing semester.

### **Class Scrap: The Freshman-Sophomore Rivalry**

“Rite of the Cane” became the autumn ritual where each team rushed toward a cane stuck in the ground; the winner was the team with the most hands on the cane. “Procs” were proclamations published in the college newspaper, one class trying to out-insult the other. “Scraps” were rope tug-of-wars, which were abandoned after a student was killed.

### **The Stump**

Free speech is alive and well on the CSU campus – that’s why we have The Stump. The Stump is a hulking section of tree stump, 5 feet across and 3 feet high, that people stand on out on the Student Center Plaza to speak their minds. As one writer colorfully put it, “Over the years, a traveling circus of orators has used The Stump to broadcast messages to passers-by within earshot.” The Stump itself has a colorful history, sometimes disappearing for years at a time before resurfacing again on the Plaza or in some dusty corner of campus. And while it may look like just a big old ugly hunk of dead wood, it’s actually a symbol of the open and free expression of ideas that is the hallmark of a great university. The roots of this Stump run deep at CSU.

*Source: For-Ever-Green, Colorado State University*

**“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it’s the only thing that ever has.”**

—Margaret Mead

Colorado State University, the city of Fort Collins, the Downtown Development Authority, and other organizations and businesses throughout the city.

UniverCity Connections aimed to bring community assets together in harmony with the natural environment – a connection that had been largely unrealized, say planners. The effort captured and leveraged the Fort Collins community’s creativity to implement the best ideas for facilities, events, places, and activities.

### **Outlining a community vision**

Since those first tire revolutions, an 18-member planning committee identified stakeholders who outlined a comprehensive community vision and strategies to achieve that vision.

“This was a true citizen’s initiative that demonstrated the power of individuals to make a difference,” says Joyce Berry, UniverCity co-chair and CSU’s vice president for advancement and strategic initiatives. Also unusual was the commitment of more than 130 stakeholders who regularly attended the monthly working meetings.

The group researched similar programs across the country and went through the SWOT process – identifying strengths, weakness, opportunities, and threats of current programs, events, and resources. The committee identified eight clusters that represented UniverCity priority themes: arts/culture, economic development, affordable student housing, sustainable energy technology, river protection/development/enhancement, mixed-use development, transit and mobility, CSU-city joint facilities, and University/community programs. Task subcommittees were then charged with identifying goals, barriers, and actions to bring to the larger group.

“What was unique about this endeavor was considering where these clusters overlapped,” says Berry. “Clean energy programs could be integrated with housing programs, and arts programs could be connected with economic development, for example.”

### **Creating consensus**

The subgroup on the protection, development, and enhancement of the Poudre River provided a good example of how those with different values and interests could work together and create consensus, offers Berry. “We often stereotype the different interests within a community. But UniverCity showed that we can maintain our values while breaking down stereotypes and create something bigger than our own interests.”

Blanche Hughes, vice president for student affairs and a member of the UniverCity planning committee, was pleased the group considered getting students more positively engaged in the community and, conversely, worked to get community members to feel more welcome on campus.

“The intentionality of the project was a real strength,” says Hughes. “The University is not a place of ivory walls. We want community members, on their own terms, to feel comfortable interacting with students.”

The group considered work already in progress such as the Chautauqua Project, the Lincoln Center remodel, the Discovery Science Center/Fort Collins Museum, the Mason Transportation Corridor, and the kayak park initiative. In addition to tangible projects, UniverCity also expanded working relationships among institutions, agencies, and individuals throughout the community.

Setting the standard for the 21st century land-grant university has long been a goal of President Penley, says Berry. “UniverCity Connections exemplifies that standard. We all provide a greater service by working together to create a vibrant community.”

The 10-month process began in August 2006.

## Fort ZED project aims for national claim on clean energy

### ***Initiative supported by UniverCity Connections shows what collaboration can achieve***

A new initiative that could transform downtown Fort Collins into a Zero Energy District is an example of what UniverCity Connections – a collaboration of Colorado State University, the city of Fort Collins, and the Poudre River corridor – can achieve.

A Zero Energy District creates as much energy as it uses each year. The Fort ZED system proposes to reduce peak energy demand by engaging a mix of renewable and traditional energy sources. The initiative could establish Fort Collins as a national showcase for the development and implementation of sustainable energy technology, said Judy Dorsey, executive director of the Northern Colorado Clean Energy Cluster.

#### **Funding**

The Fort ZED project, which met a federal deadline for matching funds this summer, is eligible for one of six U.S. Department of Energy grants exploring the reduction of peak load on electric distribution feeders using distributed generation, renewable energy, and energy management systems.

The project required a commitment of local contributions to serve as matching funds during the grant's three-year period and collected the \$4 million required to be eligible for the Department of Energy grant.

Fort ZED also will tie into the goals of the U.S. Department of Energy's Office of Electricity and Energy Reliability by working to modernize the electric grid, enhance the security and reliability of the energy infrastructure, and facilitate recovery from disruptions to energy supply.

#### **Collaboration**

Although the Fort ZED project is not solely the work of UniverCity Connections – the Northern Colorado Clean Energy Cluster and local businesses have been working on the ZED foundation for two years, said Dave Edwards of the Community Foundation of Northern Colorado – the collaboration is making a difference.

"We are seeing individuals committed to action, coming together to opportunistically capitalize and help push forward initiatives that will improve the community," Edwards wrote in an editorial.

Fort Collins is the only community in Colorado applying for the federal grant. The U.S. Energy Department will select six cities for the grant this fall. 

*This information was current at press time.*

## Faculty Council reports on 2006-07 activities

By Robert L. Jones, Chair, Faculty Council

Through Faculty Council, the faculty participates in shared governance to fulfill the responsibility for making academic policy and governing the academic affairs of the University. Frequently, Faculty Council is described as the major policymaking body on academic affairs at Colorado State. Faculty Council consists of one elected representative from each academic department and the Libraries. In addition, membership includes at-large representatives elected to equalize representation from large colleges, elected officers, chairpersons of standing committees, and ex officio academic administrators (president, vice presidents, provost, vice provosts, and deans). In addition, there is a network of 11 standing committees (faculty membership includes a representative from each college

#### **UniverCity Connections project recommendations include:**

- Plan, fund, and build a range of cultural facilities that serve residents, youths, students, and potential visitors
- Create a cultural trolley line
- Develop hotel rooms downtown
- Put a Scientific and Cultural Facilities District on the 2008 ballot
- Build a \$15 million lifelong learning center downtown
- Develop an inventory of existing and potential space that can be shared
- Build a 25,000-square-foot building to serve as an incubator for clean-energy companies
- Extend the life of the Downtown Development Authority
- Enact a zoning ordinance for affordable housing within the Mason Street Corridor
- Endorse a pedestrian bridge across the river to connect the Mason Corridor with North College Avenue
- Improve trail access along the Poudre River

*The complete UniverCity Connections recommendations were unveiled May 31 and are available at <http://www.univercityconnections.org/>.*

and the Libraries) that serve to research issues, then develop and recommend to Faculty Council policies and positions on academic matters. All policy recommendations developed by standing committees are acted on by Faculty Council for final disposition.

***So what does this technical description mean? I'm often asked "What does Faculty Council actually do?"***

Some highlights of standing committee activities this past year include:

- Executive Committee – coordinated all activities of Faculty Council and standing committees, set the agenda for monthly Faculty Council meetings, submitted an annual evaluation of the President to the Board of Governors, and met twice with the Council of Deans to discuss faculty governance issues.
- Committee on Faculty Governance – coordinated nominations and elections of faculty representatives and officers of Faculty Council, its standing committees, and University committees (e.g., Benefits Committee, Grievance Panel, Sexual Harassment Panel, University Discipline Panel).
- Committee on Intercollegiate Athletics – reviewed operations of the Department of Athletics, including rules compliance, academic integrity, general welfare, and equitable treatment of student-athletes.
- Committee on Libraries – consulted with the Dean of Libraries to advise on policies and strategic planning governing the operation of the Libraries.
- Committee on Responsibilities and Standing of Academic Faculty – drafted and reviewed proposed revisions of the Academic Faculty and Administrative Professional Manual to clarify and update policies to be consistent with expected practices, Board policies, and statutory changes.
- Committee on Scholarship, Research and Graduate Education – recommended revisions to the Graduate and Professional Bulletin including eligibility requirements for faculty to serve on graduate committees and recommended five new graduate degree programs.
- Committee on Scholastic Standards – reviewed undergraduate appeals of academic dismissal and appeals for retroactive withdrawals.
- Committee on Strategic and Financial Planning – reviewed progress in implementation of the University strategic plan, budget proposals, and annual salary and benefit increases; and made recommendations to administration and Faculty Council regarding the effect of these factors on the academic function of the University. In addition, the chair served as a non-voting member of the Council of Deans.
- Committee on Teaching and Learning – reviewed attendance policies and grading standards.
- Committee on University Programs – reviewed applications for six new centers, institutes, and other special units (CIOSUs); and conducted a biennial review process for 57 existing CIOSUs, resulting in recommendation for discontinuance of nine CIOSUs and continuance of 48 CIOSUs.
- University Curriculum Committee – developed revisions of the AUCC consistent with gtPathways and reviewed all undergraduate programs of study for compliance with the revised AUCC; reviewed all proposed degree program, concentration, option, and interdisciplinary study program changes, additions, or deletions; reviewed all course additions, changes, and drops; recommended other General Catalog revisions to Faculty Council.

In addition to reviewing and approving the recommendations of the standing committees described above, other special actions of Faculty Council included approving:

- all candidates for degrees;
- new degree programs and department and program name changes;
- the academic calendar Fall 2012 to Summer 2014;
- all revisions to the Academic Faculty and Administrative Professional Manual, General Catalog policy, and Graduate and Professional Bulletin policy; and
- all recommended curricular changes received from the University Curriculum Committee.


Faculty Council held numerous dialogue sessions with administrators – president (twice), provost (report at each monthly meeting), vice president for research, vice provost for faculty affairs, vice provost for undergraduate affairs, vice provost for graduate affairs, vice provost for outreach and strategic partnerships, vice president for enrollment and access, vice president for student affairs, vice president for information and instructional technology, director of athletics – and other guests on topics such as legislative and budget issues, student issues, student access, retention, and success, continuing education, admission requirements, instructional technology, intercollegiate athletics, etc.

The three officers of Faculty Council are actively and busily engaged in a variety of activities to represent the interests of the faculty. The chair is a full-time position that includes voting membership on the Council of Deans as well as membership on all the standing committees and numerous ad hoc groups. The vice chair is a member of the Council of Associate/Assistant Deans. The faculty representative to the Board of Governors is a statutorily defined Board member with the major responsibility to represent the academic interests of the faculty to the Board.

### ***What's likely to be on the future agenda of Faculty Council?***

Some of the pending issues I anticipate will be researched by standing committees and possibly brought before Faculty Council for deliberation this academic year include:

- policies regarding the assignment of C- grades as they impact minimum grade and/or GPA requirements;
- policies for the awarding of multiple-year contracts to non-tenure track faculty;
- the role of non-tenure track faculty in shared governance;
- policies defining interdisciplinary schools, institutes, and other special units;
- policies regarding disciplinary action against faculty (Manual section E.10.7); and
- other minor revisions and clarifications of Manual policies.

The Office of Faculty Council maintains a website (<http://facultycouncil.colostate.edu/>) with current information regarding membership, a record of all actions by Faculty Council, and the official updated copy of the Manual. Other information and links related to the interests of academic faculty are also maintained. We invite you to review the website, contact members of Faculty Council with questions and recommendations, and volunteer to participate in the activities of Faculty Council this year. 

*For a detailed description of the charge for each of these committees, see the Administrative Professional Manual at <http://facultycouncil.colostate.edu/files/manual/sectionc.htm#C.2.1.9>.*

## ► ISSUES IN HIGHER EDUCATION

### ***ColoradoBiz*: Penley weighs in on higher ed challenges**

By Robert Schwab, reprinted from *ColoradoBiz* magazine

Colorado State University President Larry Penley knows the political fire is hot for reform of higher-education funding, and he knows the coffers for the state's colleges and universities, despite passage of Referendum C in 2005, are still relatively bare.

But Penley sees promise in the state's college students, and he sees ways to make sure those students' promise is fulfilled.

The entire editorial team of *ColoradoBiz* . . . interviewed Penley at the Downtown Denver offices of the CSU board of [governors]. The interview was conducted to explore the opinions of the leader of one of the state's leading research universities regarding what the Colorado business community has made

a priority of the state's new governor: bringing Colorado colleges and universities back from the brink of a figurative bankruptcy. Education funding for higher education in the state is in a poor state.

But [in February] Penley and other Colorado State officials revealed one method by which they hope to boost funding for CSU.

They announced the establishment of a CSU venture fund, to be funded with \$2.4 million over this fiscal year and next, to create a series of academic and business "Superclusters" to help bring more commercial products to market that result from CSU research.

Penley said the University will be looking for private investors to contribute to the fund, which would provide CSU with a new revenue stream to pay for the transfer of new technology developed by the school to the marketplace. Following is the edited *ColoradoBiz* interview.

***CB: What can be done in Colorado in terms of funding higher education?***

P: Part of the issue is unless we make some fundamental changes, not much can be done about the funding of higher education, and that's part of the challenge. If you look at the (current) 6 percent limit on (state) growth and expenditures, the way we use the money above that level, primarily for our transportation needs and capital expenditures, makes it very difficult. Further, when you have other elements of our budget going up well above 6 percent, and that's true in a whole set of areas, that puts higher education kind of in the back seat, relative to any new revenue. And it makes it very hard to really climb out of the bottom of the fourth tier, which is where we are at this stage in Colorado in higher-education funding.

***CB: Along those same lines, how much do you see the plight of CSU and of CU being the same? Do you have different funding challenges, or are you in the same boat as CU?***

P: In some ways, I think the plight is the same for all of Colorado higher education, whether it's CU, CSU, Metro State, or Adams State. We all are subject to the same strictures in regards to funding. On the other hand, because CSU and CU are research universities, they face some special challenges by virtue of the high cost of certain programs. CSU is the leading institution in the state for undergraduates in science, technology, and engineering degrees. We've got 30 percent at CSU of all those undergrads; CU is somewhat under that but not far. Together we've got around 60 percent. So when it comes to the high cost of laboratories, the high cost of engineering faculty, both of us are confronting that. I think there are some differences between the two schools, however, in that CU has completed a successful capital campaign relatively recently, and CU has added differential tuition that is much higher at this point than CSU's. For the most part though, I think you're talking about all of higher ed, not just CU or CSU.

***CB: You have collaborated with CU Boulder on some projects. Otherwise, do you view CSU and CU as competitors?***

P: It's not unlike Hewlett-Packard and Intel. Hewlett-Packard and Intel are competitors. On the other hand, two years ago if you were to have walked around among the research engineers' desks at Hewlett-Packard, you would have seen big signs: Intel cannot go beyond this point! Because Intel and Hewlett-Packard are working together here.

So that's not unlike CSU and CU in certain areas. The National Science Foundation Engineering Research Center, which is the one (working with) extreme, ultra-violet light: We're the lead university and we have two partners, Cal-Berkeley and the University of Colorado at Boulder. You really need those three partners, and that's been part of the way those centers have been designed: partner universities and partnerships with the business community. The new science and technology center that we have in cloud research also has support from CU-Boulder. So, when we met with the NSF team to try to convince the NSF team that we were worthy of the science and technology center, you'd have seen Boulder faculty in the room with us that day working in



collaboration with us to convince National Science Foundation that CSU was worthy of that. In some areas, you get that kind of collaboration, and that's perfectly reasonable when you've got two really good research universities in the state.

**CB: To return to the higher-ed finance situation, is there a silver bullet? What is the path given the complexity of the issue?**

P: Well, when we wrote the paper, "Fulfilling the Colorado Promise," we have four actions there. If it were simple, we wouldn't have four, you'd have one. You have at this point very important elements of infrastructure in the state that require investment. You look at what transportation requires, and all you have to do is drive up and down I-25, or worse still, sit in a nine-hour trip from Vail back to Denver and you know that we've got challenges. So I think it isn't just a simple "we need this source of revenue." We may really need to look at collaborative effort in a number of ways: perhaps between higher education and K through 12, perhaps between higher education and transportation. I was at a meeting not long ago where someone was suggesting that higher education had to work very hard to keep dollars from going to transportation. I found myself saying, perhaps not in my own best interest, "No!" We cannot juxtapose transportation and higher education against each other if we're going to have economic prosperity; you're not going to achieve economic prosperity if our transportation infrastructure deteriorates. You're also not going to have economic prosperity if you don't have the labor force that's necessary to be globally competitive. Both of these two elements are real needs of the state.

*Excerpt reprinted with permission from ColoradoBiz magazine, March 2007, [www.cobizmag.com](http://www.cobizmag.com).*

## Universities that serve low-income students can achieve high graduation rates

Colorado State is moving forward this year with initial implementation of its comprehensive plan to support student retention through the provision of a high-quality undergraduate experience. Retaining and graduating students is a direct reflection of the overall quality of their undergraduate experience, according to a 2006 CSU study of student retention. Improvements to that experience – in the form of smaller classes, better advising and support services, upgraded facilities, challenging courses, a greater emphasis on achievement, a strong sense of community, and a lessened financial burden – all contribute to student success, the study found.

### Student success initiatives

CSU will begin the first full phase of plan implementation in the 2007-08 academic year. (The full plan is available online at <http://www.president.colostate.edu/content/docs/RetentionReportDraft4.pdf>.)

Vice President for Student Affairs Blanche Hughes and Vice Provost for Undergraduate Affairs Alan Lamborn will track the implementation and progress of the effort, called Student Success Initiatives.

The University's plans took on a national context with the recent release of a report from the Pell Institute for the Study of Opportunity in Education.

The Pell Institute study highlights issues relevant to CSU, said Hughes, who noted that about 18 percent of our students are from low income backgrounds as measured by Pell Grant eligibility.

"Our own studies have led us to the conclusion that it is important to focus on the needs of all students in arriving at a set of strategies for increasing student success. If we do this well, we also serve the needs of particular populations, such as low income students. On the other hand, when it comes to implementing these strategies, we need to consider the differences among populations so that we are effective in involving and serving members of all groups," said Hughes.

### **National recommendations**

The Pell Institute study reinforced that CSU was on track with the Student Success Initiatives proposed last spring by the Coordinating Committee on Undergraduate Student Success and its subcommittees, said Lamborn. “The network of strategies identified in that process is exceptionally well-aligned with the Pell Institute recommendations. Our plan is responsive to just about every one of those recommendations.”

After an analysis of the scholarly literature and practitioners’ reports on “best practices,” the committee drew a simple but foundational conclusion: The most effective way to increase retention and graduation rates was to adopt strategies that focused on increasing the quality of students’ educational experiences.

“To enhance the quality of our students’ educational experiences we need to strengthen the array of educationally-enriching opportunities we provide across the full breadth of the University and create a culture of high expectations – a culture in which there is a shared expectation among students and faculty that students will take advantage of the opportunities to have an enriching educational experience,” said Lamborn. “The evidence is clear: Developing a culture of educational engagement increases student motivation, satisfaction, and performance. Increased student success and graduation rates are natural byproducts of these educational outcomes.”

The Pell Institute studied differences in retention and graduation rates among large public colleges and universities that serve high numbers of low-income students and examined the institutional characteristics, practices, and policies that might account for such differences. The study continues previous research conducted by the Pell Institute that analyzed retention policies and practices at smaller public and private four-year institutions.

The report urges public universities to do more to help their low-income students achieve at higher rates. Among the recommendations:

## **Establish the following conditions to improve graduation rates**

### **A personalized educational experience**

- Make early contact with students through first-year programs
- Closely monitor student progress through advising and early warning systems
- Limit class size and/or reduce the negative effects of larger class sizes through supplemental instruction programs
- Offer students individualized services and support in special programs

### **A commitment to undergraduate education**

- Establish a strong teaching mission
- Intentionally recruit and hire faculty who support the teaching mission of the institution
- Acculturate new faculty to teaching mission through orientation programs
- Reward faculty with promotion and tenure for focusing their time and attention on teaching undergraduates

### **A sense of shared community**


- Create a sense of community on campus by promoting student involvement in campus activities and events
- Foster participation in special programs to create a greater sense of belonging on campus
- Encourage involvement in college- or department-sponsored programs and events, by scaling down and personalizing the college experience to create a “small school” atmosphere

## An institutional culture that promotes success

- Set retention and graduation goals and measure institutional performance with data
- Support key administrators who articulate a centralized vision and commitment to retention
- Support retention efforts from all members of the campus community
- Encourage campus-wide coordination and collaboration in retention programs
- Solicit strong support and resources from the state or system to focus on retention
- Implement strategies that address the needs of the general student population rather than focusing specifically on the needs of at-risk students
- Focus on the special characteristics and circumstances of low-income students when developing and implementing retention policies and practices

## Common practices and policies across higher-performing large public institutions

Most higher-performing institutions have moderately selective admissions and serve mostly full-time, residential, traditional-age students, the report found. Students at these institutions are graduating at better than expected rates. The following policies and programs, the study found, contribute to the success of their students.

- Designated faculty or staff members as “first responders” to students’ needs, helping students navigate these large, complex institutions
- Relatively high levels of student involvement and engagement in campus activities and programs, which personalize the college experience for students
- Well-developed first-year programs, such as freshman orientation programs, freshman success courses, freshman interest groups, and first-year learning communities, in which student participation is mandatory or high
- Efforts to improve instruction in gate-keeping introductory courses, particularly in mathematics, such as reducing class sizes or keeping class sizes small through supplemental instruction
- Early warning and advising systems to monitor student progress and to intervene when student performance is low
- Ample academic and social support services, which are well-used by students because of proactive efforts to coordinate services with advising systems, advertise services widely, and train faculty and staff about available services
- Special programs for at-risk student populations that incorporate many of the “best practices” in the retention literature
- Strong leadership from top administrators who create an institutional culture that promotes student success by using rhetoric that demonstrates their commitment to retention, providing adequate resources to fund programs, and offering rewards to faculty and staff for getting involved in retention efforts
- A central person, office, or committee that coordinates undergraduate education and/or retention activities across academic and student affairs staff and programs in order to foster collaboration
- An emphasis on using data about retention in the decision-making process as well as on evaluating new retention programs in order to improve delivery of services, outcomes, and the efficient use of limited resources 

Source: Pell Institute for the Study of Opportunity in Higher Education, “Demography Is Not Destiny: Increasing the Graduation Rates of Low-Income College Students at Large Public Universities”

### Should we care about educational access?

U.S. colleges and universities are facing an economic-turned-educational challenge: a less-educated workforce but an increased demand for highly skilled workers. Shifting demographics only amplify the problem. Although African Americans and Latinos make up an increasing portion of the country's population, the college graduation rates of these groups trail those of white students, according to the U.S. Census Bureau. A projected 9.6 percent decrease by 2025 in 18- to 24-year-old white adults poses additional challenges to institutions and communities dedicated to educating a highly skilled, diverse workforce for the 21st century.

## Key issues in higher education debated

Colorado State University President Larry Edward Penley has led a clarion call for adequate and sustained funding for higher education in the state of Colorado. Penley also has been a national proponent for educational access and success for qualified students and has worked to position CSU as a leader in promoting accountability at the university level. While budget issues top priority lists at universities and colleges throughout the country, other agenda items also are being argued nationally by presidents, provosts, legislators, and governors, reports *The Chronicle of Higher Education*. Here's a round-up of some of the issues other states have been debating this year:

### Accountability and governance

State officials across the country have proposed that college costs and student achievement information be made more accessible. Meanwhile, allegations of corruption, nepotism, improper billing, kickbacks, botched presidential searches, and vague amendments to state constitutions in Alabama, New Jersey, Iowa, and Hawaii have prompted lawmakers to propose such plans as merging educational institutions and challenging reappointments of state regent boards.

### Access

Governors in Arkansas, Oregon, and Utah are working to increase state support for need-based financial aid. Legislators in Texas are considering such issues as repealing laws that guarantee top high school students admission to public state colleges, and Tennessee lawmakers are considering increasing the number of low-income and first-generation college students by offering scholarship programs for academically qualified students.

### Tuition

State governors and legislators throughout the United States are pressuring institutions to rein in tuition increases. Texas legislators have considered repealing tuition-setting powers they granted to public institutions, and Washington lawmakers propose a limit on annual tuition increases and freezing tuition rates for incoming students. Virginia is reintroducing a plan to allow community college students to pay two-year institution rates if they transfer to a four-year college.


### Student preparation

While many colleges and state legislatures are increasing their minimal requirements for admission, some state legislatures are focused on putting more high-school students on the path to college.

### Immigrant benefits

Debates over whether illegal immigrants should be permitted to pay in-state tuition or receive college aid are expected to continue to surface this year. Some Arizona and Nevada legislators have pushed to limit educational benefits for illegal residents, while Minnesota officials have debated legislation to expand aid for illegal immigrants.

### Research and competitiveness

Governors and legislators in Iowa, Missouri, New Jersey, and Wisconsin are supporting controversial research that involves stem cells. Alaska and South Dakota are developing plans to increase public support for university research to help foster economic growth. 

## Board of Governors approves CSU budget, tuition for 2007-2008 school year

The Colorado State University System Board of Governors in June approved a \$367.3 million 2007-08 educational and general budget for Colorado State University in Fort Collins.

With substantial additional support for undergraduate programs, the budget will add 45 new faculty positions and help to retain essential faculty with a 5 percent raise for faculty and staff. It will also further increase campus safety with improvements to security and the addition of three new police officers.

The Board also authorized the sale of a \$175 million bond issue for capital construction and improvement projects largely on the Fort Collins campus. As states have decreased their funding of controlled maintenance and capital construction, universities nationwide have increasingly turned to issuing debt as a means to assure that students have quality facilities in which to learn. Colorado State's current debt load per student – at approximately \$4,800 – is substantially below other institutions, including Colorado institutions. The bond issue will enhance substantially the quality of the education environment at the University.

Approved as part of the educational and general budget were an additional \$2 million of financial aid to increase access to Colorado State and \$2 million to create two new Superclusters.

### Tuition increases

The budget includes a tuition increase on the Fort Collins campus of \$85 per semester for a full-time resident student and \$369 per semester for a full-time non-resident. Closing the University's credit-hour gap by one credit – meaning a full-time student will now pay for 10 credits instead of nine – will cost a full-time resident student an additional \$202, bringing the average total cost increase per semester for full-time residents to about \$287.

Non-resident students will pay an additional \$874 as a result of the credit hour closure, bringing the average total cost increase for a full-time non-resident to about \$1,243.

With a total full-time 2007-08 resident tuition of \$4,040 per year, Colorado State is still only about 80 percent of the average of tuition and fees charged by such peers as Kansas State University and Texas A&M, according to a recent analysis.

“The 2008 budget allows us to cover mandated costs and provide a 5 percent salary increase. While it does not allow the University to move forward as quickly as the Board had hoped with the new stretch goals, this is the healthiest budget CSU has had in 15 years,” said President Penley. “We appreciate the governor's support during the budget process. This budget will allow us to make progress toward our institutional stretch goals, invest in faculty and student retention, increase financial aid for undergraduate students, and significantly enhance the overall quality of the institution.”

“The Board of Governors has set aggressive stretch goals for Colorado State University to achieve the highest levels of excellence in education, research, and outreach to the state,” said Douglas L. Jones, chairman of the CSU Board of Governors. “This budget will go a long way in helping the University achieve those specific goals.”

### Degree envy?

The United States is trailing its competitors in college degree attainment. Experts predict that the degree deficit could reach 16 million by 2025. Belgium, Canada, Ireland, Japan, Norway, South Korea, and Sweden already are ahead of the United States in awarding college degrees. More than half of 25- to 34-year-olds in Japan and Canada have a bachelor's or associate's degree, compared to only four in 10 Americans in the same age group.

*Source: “Hitting Home: Quality, Cost and Access Challenges Confronting Higher Education Today,” a report from Making Opportunity Affordable, supported by the Lumina Foundation*

### **Per-student funding**

Still, Penley noted, this progress comes within a troubling context: A recent national study by the State Higher Education Executive Officers on the funding picture for higher education placed Colorado 50th among all 50 states in per-student support for higher education.

“We at CSU are not going to sit around and feel sorry for ourselves because of the funding situation,” Penley said. “This is an excellent university that attracts highly qualified students and leads the world in research areas ranging from tuberculosis and infectious disease to cancer and alternative energy. We’ve built that reputation while operating efficiently and responsibly, with very limited resources. “We appreciate the state support we’ve received, but Colorado must do more to remain competitive, and Colorado State University must take responsibility for assuring that it remains one of the nation’s major research universities.”

### **Stretch goal support**

Penley said he was encouraged by recent discussions with the governor and other leaders in the state about a unified proposal to increase funding for all of higher education, and added that Colorado State will only move ahead as all of Colorado’s higher education is appropriately funded. Significant funding in this year’s Colorado State budget is being spent on the University’s stretch goals, which include adding 450 new faculty, increasing enrollment by 6,000 students, and doubling research spending to \$500 million in the next five years – to remain a competitive contributor to the Colorado and global economies and to provide the best possible educational experience for all students.

To help meet those stretch goals, the Board approved the bond issue for the University System to improve the quality of facilities for students. That includes improvements to the University Center for the Arts, a new Computer Science Building, and an addition to Rockwell Hall.


### **Budget increase**

The 2007-2008 budget increase of \$39.2 million includes \$18.4 million beyond mandatory increases to help achieve the stretch goals, including the creation of 45 new faculty positions. The budget means the University will also:

- continue to develop its new Alliance Program, a partnership with 10 Colorado high schools designed to encourage high-school students around the state to attend college;
- provide enhanced support for graduate education;
- create new degree programs in journalism and technical communications, health and exercise science, and biomedical engineering;
- establish the Center for Applied Studies in American Ethnicity as an academic department;
- begin initial work on the development of new athletics facilities, including an indoor practice facility and a student athlete success center;
- enhance faculty and administrative professional medical benefits;
- provide enhanced support for campus safety and security including three new police officers; and
- enhance student retention programs.

“The addition of new faculty and programs to the University will allow Colorado State to continue its strong commitment to the quality of the educational experience and research environment,” said Tony Frank, senior vice president and provost.

The University also will continue to increase its budget for research and discovery by investing in additional Superclusters.

The CSU campus in Fort Collins attracts more research funding than any other University in the state outside of the Health Sciences Center in Denver, surpassing the University of Colorado-Boulder campus for the first time this year. 

## Variations found in state funding for higher education

### ***Findings significant for Colorado State University***

Nationally, state funding per student in Fiscal Year 2006 for public colleges and universities increased 5.1 percent, the first constant dollar increase since FY 2001, according to a report released by the State Higher Education Executive Officers this spring. State and local support per full-time-equivalent student was \$6,325 in FY06; per-student support was \$7,371 in FY01.


SHEEO, a national association serving statewide governing boards for postsecondary education, found that reversing a five-year downward trend was aggregate state and local government support, which grew by 7.6 percent, and the leveling off of enrollments following five years of growth, which totaled 17.9 percent. Net tuition revenue per student grew 3.6 percent in constant dollars in FY 2006, representing the first year since 2001 that tuition revenue increased at a slower rate than state support.

Between 2001 and 2006 in Colorado, however, student FTEs grew by 12.3 percent, while the state’s revenue per student dropped by 14.1 percent. “This makes it the second worst drop in the country,” says Senior Vice President and Provost Tony Frank. Colorado’s per-FTE support now stands at \$7,644, ranking 50th in the United States.

### **Lean years**

In a period when enrollment went up by 14.8 percent, state and local support per student fell by 14.2 percent. Only seven states saw five-year increases in government support per FTE held against inflation: Hawaii, Nebraska, Nevada, New Mexico, South Carolina, Tennessee, and Wyoming.

Seventeen states saw five-year decreases in appropriations per FTE that exceeded 20 percent: Colorado, Illinois, Iowa, Kansas, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, Virginia, and West Virginia.

Public colleges and universities made up some of that revenue gap with tuition increases. But even with revenue from tuition increases added, the five-year rate of change in constant dollars, total revenue per FTE was down 5 percent nationally. 

*Source: State Higher Education Executive Officers, “State Higher Education Finance FY 2006”*

### Hatch Act Formula Fund

Hatch Act funds are provided each year to State Agricultural Experiment Stations for agricultural research and distributed to land-grant universities according to a population-based formula. Research includes all aspects of agriculture, including soil and water conservation; plant and animal production; utilization of food and agricultural products; forestry; aquaculture; home economics and family life; human nutrition; rural and community development; sustainable agriculture; molecular biology; and biotechnology. Research addresses problems of local, state, regional, or national concern. Each State Agricultural Experiment Station is required to match 100 percent of the federal funds received. A 25 percent portion of the funds is allocated to fund cooperative, multi-state research employing multidisciplinary approaches and working with other State Agricultural Experiment Stations, the Agricultural Research Service, or other agencies to solve problems that concern more than one state.

*Source: USDA Cooperative State Research, Education, and Extension Service*

## Proposed U.S. ag budget cut affects university programs

President Bush's 2008 budget for the Department of Agriculture will put a financial squeeze on Colorado State University and other land-grant universities, shifting research dollars away from individual institutions and toward competitive multi-state, multi-institutional projects.

Under the budget proposal, agricultural research spending would decrease by 14.4 percent, from \$2.75 billion in 2006 to \$2.35 billion in 2008. The proposed budget allocates \$1.04 billion to the USDA's Cooperative State Research, Education, and Extension Service, about 13.5 percent less than the service received in the 2006 fiscal year. This USDA unit provides funding support to CSU using a formula that is based on the size of agriculture in Colorado.

### Supporting research

Hatch Act funds – formula-based funds that support research in agricultural experimental stations at each land-grant university – would receive \$165 million, but about 60 percent of the funds would be reallocated to a multi-state, competitive grant program.

The Hatch Act funds the CSU Agricultural Experimental Station, which conducts research to meet state agricultural production needs through research projects conducted in academic departments at CSU and at eight off-campus research centers throughout Colorado. About 25 percent of the Experiment Station funding originates from Hatch formula funds, which provides a base budget for research infrastructure such as faculty, staff, graduate students, facilities, and research expenses in on-campus academic departments and at off-campus research centers.

### Fund reallocation

“Moving funds from the Hatch program to competitive grants reduces the base support for ag research programs at CSU,” says Lee Sommers, director of the Agricultural Experiment Station and associate dean for research in the College of Agricultural Sciences.

The reallocation of Hatch formula funds to a multi-state, competitive grant program would reflect a 15 percent reduction in reliable base funding for departments and research centers funded by Colorado State's Agricultural Experimental Stations. This reduction in stable, base funding would result in fewer faculty, support staff, and graduate students and would require a re-evaluation of CSU's off-campus research facilities, Sommers notes. Experiment Station funds now used for activities located in Colorado would require broader project objectives to compete for multi-state funds.

### University response

The University is addressing the issue. “We have been working with our federal lobbying team and Colorado's congressional delegation to create awareness about the impact of these changes on agriculture in Colorado and the West,” says Tony Frank, senior vice president and provost. “These critical research programs conducted by our Experiment Stations have a direct impact on the economic health and continued competitiveness of the agricultural industry.”


The Hatch Act formula funds provide a base that supports the infrastructure needed to establish and continue long-term research programs. Competitive grants typically support programs of two to four years in duration. “Some of our programs simply aren't compatible with short-term funding typical of the funding guidelines used for competitive grants,” says Sommers.



## Short- and long-term funding issues

Developing new varieties of wheat is an example of a long-term research effort that is not compatible with short-term funding, explains Sommers. “These projects commonly require seven to 10 years. We would need assurance that we have long-term funding before we begin such a project.”

For some projects, multi-state collaboration may not be applicable or fit the research objectives. The FY08 budget proposal would shift funding for ag research programs at land-grant universities from ongoing base support to a program where shorter-term objectives prevail. “We will continue to compete for the multi-state grant funds, but it will be difficult to support long-term programs without long-term funding,” says Sommers.

“I think it’s important that we have a balanced approach to fund ag research,” Sommers says. The Hatch formula funds provide a base funding for long-term programs, while competitive grants provide significant support for emerging issues and shorter-term funding. “The overall Experiment Station research program is best served by maintaining a balanced portfolio of base funding from Hatch formula funds combined with competitive grants for short-term research efforts. It is important to realize that this is only a proposal being debated by Congress at the present time. Congress has rejected similar proposals in the past two years.” 

Sources: United States Department of Agriculture, FY 2008 budget proposal, <http://www.usda.gov/budget> and The Chronicle of Higher Education

## CSU sets research-funding records when industry support slumped

### *Research support rebounds nationally*

Colorado State recently announced that it had once again achieved record levels of research expenditures – \$296 million for the first time last year. The increase was 11 percent more than fiscal year 2006 and an increase of 49 percent over the past five years, according to figures released in August by the Office of the Vice President for Research. CSU’s average rate of increase, based on the last three years of reported data, has well-surpassed that of Texas A&M, North Carolina State, Purdue, UC-Davis, and all the campuses of the CU system.

As in 2006, federal expenditures in 2007 comprised the majority – 73 percent – of CSU’s sponsored expenditures and totaled \$217.1 million. State, foundation, commercial, and other non-federal expenditures made up \$35.8 million or 12.1 percent of the total, with institutional support funds adding another \$43.1 million or 15 percent of the total.

The U.S. Department of Health and Human Services was the largest source of external expenditure at CSU for the seventh consecutive year, largely because of the University’s focus on infectious disease and biomedical research initiatives.

Support for university research by industry is also on the rise nationally, according to a report released this spring by the National Science Foundation, which indicates that after three years of declining support from industry, colleges and universities saw an upswing in funding for science and engineering research and development in 2005. Colorado State University remained in the top 100 ranking 61 among 640 institutions surveyed that have bachelor’s or higher-degree programs in science and engineering and spend at least \$150,000 on research and development in those areas. Industry financing climbed 7.7 percent nationally, reaching a record \$2.3 billion in 2005. Even with the increase, industrial research and development financing remained just 5 percent of the total, lagging behind support from the federal government, state and local governments, and institutional sources.

## National R&D spending facts

- **\$45.8 billion**  
Total that colleges and universities spent on research and development in 2005
- **50%**  
Increase in academic spending on research and development since 2000
- **\$29.2 billion**  
Amount the federal government spent on research and development in 2005

## Top institutions in federal research and development expenditures in 2005

Rank	Institution	Fiscal 2005	Increase from 2004
1	Johns Hopkins University	\$1,277,292,000	3.9%
2	University of Washington	\$606,317,000	3.0%
3	Stanford University	\$574,675,000	6.1%
4	University of Michigan	\$554,516,000	6.4%
5	University of Wisconsin at Madison	\$477,582,000	9.9%
6	University of California at Los Angeles	\$469,889,000	1.9%
7	University of Pennsylvania	\$465,284,000	6.9%
8	University of California at San Diego	\$463,946,000	0.4%
9	Massachusetts Institute of Technology	\$457,235,000	6.9%
10	Columbia University	\$453,188,000	11.5%
11	University of Colorado	\$449,366,000	8.3%
<b>61</b>	<b>Colorado State University</b>	<b>\$154,245,000</b>	<b>4.8%</b>

Sources: National Science Foundation "Survey of Research and Development Expenditures at Universities and Colleges" and The Chronicle of Higher Education

## *Chronicle* highlights Colorado State's decade-long trend of improvement with fewer resources

The following article appeared in The Chronicle of Higher Education, May 25, 2007

Making progress with fewer resources will have to be its own reward for Colorado State University at Fort Collins. Over the last five years, state budget cuts have driven higher-education spending per student down 38 percent, the sharpest drop in the country.

Yet Colorado State has continued its decade-long trend of improvement: The institution's six-year graduation rate has risen to 63 percent from 54 percent, and the percentage of classes with 20 students or fewer has more than doubled, to 35 percent.

Those changes, however, have not led to a rise in rank. Since 2004, Colorado State has dropped to 124 from 112 in *U.S. News & World Report's* annual list. One culprit is the University's declining selectivity. The acceptance rate is higher than it was five years ago, and only 17 percent of new first-year students are in the top 10 percent of their high-school classes, compared with 25 percent in 2003.

Anthony A. Frank, Colorado State's provost, says his university could reverse that trend by offering more merit scholarships to entice higher-achieving students, but officials have devoted more

resources to need-based aid. And despite pleas from the financial-aid office for more merit aid, Frank says, officials recently chose to allocate an additional \$500,000 to improve academic support services for students.

Furthermore, 99 percent of Colorado State's faculty members are full time, a higher percentage than any Ivy League university and the vast majority of institutions that rank higher than Colorado State. "We could hire more adjunct faculty and create more class sections to drive down expenses," says Frank. "But is that necessarily an improvement in the educational product? I don't think so." ■

## ► TALKING POINTS

### Board approves four-year plan for parking fee increases

The cost of parking on the Colorado State University campus will increase gradually over the next four years to support expanded parking access and improvements to existing lots.

At its June meeting, the Board of Governors of the CSU System approved a proposal that will see fees rise annually between the coming academic year and fiscal year 2011:

- Faculty and staff yearly permit rates will increase \$29 this year from last year to \$124. Rates will rise \$36 the following year to \$160, \$50 in FY10 to \$210, and \$51 in FY11 to \$261 – which will amount to just less than \$22 a month.
- Monthly faculty-staff permit rates will increase over the same time period from \$18 in FY08 to \$37 a month in FY11.
- Commuter student permits will increase \$26 next year to \$111 annually. The following year, they will increase \$32 to \$143, \$45 to \$188 in FY10, and \$55 to \$234 in FY11. Commuter students will also have the option of buying parking permits at a per-semester or monthly rate.
- Residence hall permits, for students who live and park on campus, will increase over the same four-year span from \$143 next year to \$303 in FY11.

Beginning this semester, a limited number of lower cost parking spaces are available at the unpaved Bay Farm Lot behind the University Park Hilton, where an annual permit costs just \$50.

A full list of the new fees is available on the CSU Parking Services website at <http://parking.colostate.edu/>.

#### Reason for increases

The cost of a faculty and staff parking permit at CSU has gone up only \$2.40 a year, on average, over the last 25 years, and the last fee increase was in 2004. The Board supported the plan to increase fees to generate \$2.9 million in new revenue each year, which will fund the construction of the campus's first parking garage and address the anticipated loss of about 600 parking spaces over the next few years because of building construction and expansion.

Parking rates at CSU have long lagged behind those at peer institutions and other Colorado campuses. Faculty and staff at the University of Northern Colorado paid \$190 to park last year, while rates at places like University of North Carolina, University of Illinois, Penn State, and Washington State ranged from highs of \$370 to \$1,152 for a single year. Similarly, a monthly parking permit in a city of Fort Collins parking garage is \$44.

### Feedback solicited

A draft fee-increase proposal was introduced to campus this past spring, and Parking Services revised it significantly based on feedback from campus groups including Faculty Council, ASCSU, and the Classified Personnel Council, said CSU Parking Commander Dave Bradford.

“In general, people on campus understand the need for increased parking rates,” Bradford said. “They just want to make sure that any increases are fair and reasonable, that we’ve got a concrete plan for spending the funds on parking improvements, and that our operations are efficient and customer focused. We believe the final proposal approved by the Board addresses all these concerns and will serve the University well over the long term.”


In response to campus feedback, the timeline for implementing the changes was extended from three years to four, to lessen the impact of each annual increase, and the lower-cost Bay Farm parking option was added. In addition, “A” parking spaces reserved for use by the Office of the President and senior administration, which previously required a standard faculty/staff permit, now will require a special \$600 annual permit, with the cost increasing to \$1,300 by FY11.

### Maintenance costs increase

The State of Colorado requires that users pay the cost of parking on public properties like the CSU campus, including supporting any needed repairs, maintenance, and construction of new spaces. Parking Services does not receive funds from the University, operating solely on revenue generated from permit sales, meter parking, and parking fines. The simple cost of maintaining parking spaces has been on the rise in recent years, outpacing the current Parking Services revenue. Since 2003, the cost of asphalt alone has increased about 25 percent. Construction costs per space at CSU are now about \$5,325.

### Communication continues

One point that came through clearly from faculty and staff was the need to explore new and different options for parking on campus, Bradford said. Over the coming year, Parking Services will continue to review options including sliding scale fees, extended meter parking hours, further development of off-campus parking at a reduced rate, and fees for athletic and special events on campus property.

In the meantime, construction is expected to begin on the University’s first parking garage in fall 2008. Three locations are now being considered for the garage: at the University Square lot on the corner of Pitkin Street and College Avenue; at the corner of Centre Avenue and Lake Street; and along Laurel Street. The forecasted cost per structure is \$9 million to \$20 million, depending on location and size. 

## Lockheed Martin exec discusses evolving workforce, ‘war’ for talent

*Joanne Maguire, executive vice president for Lockheed Martin Space Systems, addressed business representatives this spring at a Colorado State University executive luncheon in Denver. Following are excerpts from her remarks, which focused on the evolving workforce and competition for talent.*

The workplace is evolving and, along with it, management styles. More and faster change seems inevitable.

For example, the Columbia Business School has begun a program that teaches the importance of a more empathetic and sensitive leadership style in today’s global business world.

The Columbia students are being taught to read facial expressions, body language, and posture and how what they are thinking and feeling can affect others.

Without a doubt, the old “command and control” style of leadership in vogue when I entered the workforce is slowly but surely morphing.

These changes in leadership style are a natural response to the changing face of our workforce.

### **Workforce diversity translates to profitability**

Cedric Herring, a sociologist at the University of Chicago, recently released some stunning data that seemingly answers the question of whether diversity makes a difference in the workplace. Mining public data on diversity levels and business performance from some 250 U.S. companies, he found that the more diverse a company, the greater its market share and profitability.

Herring’s data held true for business success whether a company was large or small.

At Lockheed Martin we got the message long ago: In the war for talent, inclusiveness is the name of the game. Not only does it bring us the best people, it lets us bring out the best in all our people. And as a result, everybody wins: customers, employees, shareholders.

The implications are twofold:

- If you’re in charge of a growing business – and you intend to keep growing – you’d better take a good, hard look at the changing face of America. You cannot afford to overlook or neglect any category of candidates.
- If you are seeking to advance your own career, rather than feeling constrained by your “difference” – be it race, gender, religion, physical handicap, native tongue, orientation, or any other personal characteristic – now is the time to find the strength in that difference and make it work to your advantage. Because in today’s war for talent, enlightened, thriving companies are embracing diversity. They are fishing in the talent pool with wide nets rather than a rod and reel.

What does that mean on a personal level? It means an era of opportunity for those who refuse to be bound by stereotypes and labels. That’s what I did. Early in my career, I decided that the positive side of being a woman in a male-dominated field was that I was going to be more visible. In the space business, it has been my experience that performance matters more than gender. So, since I was going to be noticed by higher management, I was determined make the most of it – and the rest, as they say, is history.

### **Consider diversity as ‘inclusiveness’**

I must admit I have reservations about the word “diversity” itself, because – ironically – it can be divisive. When we’re talking about hiring practices, teambuilding, or anything else pertaining to people, I prefer the word “inclusiveness” over “diversity” because I think it elevates those who are in minority groups without alienating the majority.

There’s a place in our language for both diversity and inclusiveness. Diversity is the goal we want to achieve, while inclusiveness is the means we’re going to use to achieve it. When we promote inclusiveness among our people, we achieve diversity in the ideas and solutions they develop. Without that kind of diversity, it is my conviction that the well-spring of innovation dries up. And for a company like Lockheed Martin, innovation is our most precious raw material.

### **War for talent**

One of the most pressing business challenges facing Lockheed Martin today is a problem that we need partners like Colorado State University to help us tackle. Quite bluntly, our employees are getting older. A disproportionate number of us belong to the baby boomer generation: over 50 years old, and nearing retirement. This would not be a problem except that at the other end of the talent pipeline, fewer and fewer college students are preparing for a career in this industry.

Lockheed Martin is not alone in the challenge to recruit a new generation of qualified workers. Just two months ago, Aviation Week & Space Technology magazine reported that U.S. students are showing a disturbingly low interest in math and science.

Of those who do go into engineering ranks from the nation's top 15 engineering schools, a mere 7 percent of students expect to pursue a career in aerospace and defense.

### **U.S. is lagging**

The implications for the nation's future are huge. In 2005, U.S. universities awarded 70,000 bachelor's degrees in engineering and 41,000 master's and Ph.Ds. Compare that figure to the numbers overseas. The Aviation Week article estimates China is producing five times as many engineers and India four times as many.

Further, more than half of the advanced degrees granted in the U.S. were earned by citizens of other countries. This is of particular concern to our aerospace industry. Since much of what we do is in support of national security, the overwhelming majority of our employees must be U.S. citizens. If current trends hold, there will be a potential shortfall in the U.S. of between 41,000 to 87,000 defense engineers by 2010.

### **Promoting interest at young age**

Of course, at Lockheed Martin, we have seen the writing on the wall, and we have been working methodically for some time to promote interest in space among children at an early age. We need the next generation of engineers and scientists, but so does our nation. It is vital that the United States maintain its status as the world leader in technology, and to do that we need more young people to get excited about math and science.

For the last several years, we have insisted that half of all our new hires be new college graduates, and across the corporation we are recruiting an average of 4,000 new engineering graduates a year (or approximately 18 new employees every single business day).

### **More than rocket science**

And I should point out that you don't have to be a "rocket scientist" to work here. When we interview potential candidates, we are looking for more than folks with 20-pound brains. We are also looking for team players with passion and curiosity, ethics and integrity. Some psychologists make a distinction between what they call IQ (intelligence quotient) and EQ (emotional quotient). For us, both are important. (EQ is a measure of a person's "soft skills," such as moral judgment, teamwork, and values.)

In short, we have a big challenge in front of us, with a lot at stake. America is in danger of losing its competitive edge. We are trying to spread the word among students at the earliest levels that studying math and science is cool, important, and rewarding.

### **Attracting talent**

Despite the challenges I mentioned earlier, Lockheed Martin is currently succeeding in attracting the talent we need. While it may be true that the work we do is exacting, it's also exciting, exhilarating, and extraordinary. Fortunately, the current crop of candidates entering the job pool understands that, and they want to be part of it.

[Lockheed Martin] started here in Denver back in the 1950s with a contract to build the Titan Intercontinental Ballistic Missile – or ICBM. Since then, the industry and the economy have grown up around us, and today Colorado is the nation's No. 3 state when it comes to aerospace, behind only Florida and California. Lockheed Martin is still the state's largest aerospace employer, but now there are dozens of other companies who serve as our partners, suppliers, and competitors.

And the contributions that the space business has made – to society, to technology, and to democracy – are incalculable.

### **The case for space**

Space can be a creative solution to some of the most pressing problems facing our population – from environmental hazards, to utilization of natural resources, to the increasing mobility of goods and people, to the development of our information society, to new solutions for ever-growing security threats.

Just think about what we did last year with our Stardust mission. We sent a capsule out into deep space, on a 3-billion mile round-trip journey to pass through the tail of a comet, capture dust samples that will give us insight into the origins of our solar system, and then parachute those samples back to a soft landing at a specified location in the middle of the Utah desert. This is the sort of project that makes a hole-in-one seem easy.

In fact, perhaps a more fitting analogy would be that old McDonald's commercial featuring basketball stars Michael Jordan and Larry Bird having a shootout for a Big Mac. It ends with them standing on top of a skyscraper as Michael Jordan calls his next shot: "Off the expressway, over the river, off the billboard, through the window, off the wall ... nothing but net."

When we partner with NASA – as we did last year with the Mars Reconnaissance Orbiter – it's just like that: "Off the launch pad, over the clouds, through multiple-stage separation, around the earth, on to Mars, dropped into orbit, bounced off the Martian atmosphere for six months to transition from an elliptical to a circular orbit, turn on the camera, transmit the photos ... and then wait ten minutes for the signals to arrive. And while we're waiting? "Nothing but sweat!"

### **100 percent mission success**

You see, in this game, there's no room for miscalculation, because we're playing for a lot more than a Big Mac. Our job is to deliver exacting standards of excellence, and "100 percent mission success." When you're dealing with multi-million dollar payloads, you don't get a second chance. It's "one strike and you're out."

This relentless dedication to our customer's mission is what keeps us going ... and keeps us growing. It's reflected in our corporate tagline: "We never forget who we're working for." And it's what drives us to raise the bar on everything we do.

As leaders, we tell our employees that "Delivering Results" is the number one priority, but winning "at any cost," or "despite any circumstance" is not acceptable.

We don't want to rely on diving catches. We don't want to motivate through intimidation. And we don't want to cut corners on our company values. Our three values were restated last year to make them simpler to remember. We tell our employees to:

- Do what's right
- Respect others
- Perform with excellence

About the same time we streamlined our company values last year, we also launched a new management philosophy and practice that we call Full Spectrum Leadership.

Its underpinning is the recognition that we must attend not just to what we achieve leading teams but how we as leaders achieve it.

### **Invest in employees**

This philosophy acknowledges that a newly hired Colorado State University graduate joining Lockheed Martin brings value on Day 1, but that value accelerates quickly along with our investment in them. And if we want to retain these employees, they are not just interested in where they are led, but how they are led.

In the old days of “command and control,” management might not have worried about this, people were more commodities.

So what are the facets of Full Spectrum Leadership? We challenge our leaders to:

- Model personal excellence, integrity, and accountability
- Shape the future
- Build effective relationships
- Energize their teams
- Deliver results

This year, we have begun measuring the degree to which Full Spectrum Leadership has become embedded into our corporate culture. Every leader is now required to demonstrate progress toward these goals in his or her performance objectives.

### **Cultivating leaders verses managers**


It is my hope and belief that someday soon, I’ll be making another speech just like this one, and I will be talking about the transformational effect that Full Spectrum Leadership has had, not only for Lockheed Martin, but for other companies who embraced a similar vision.

At Lockheed Martin, we avoid the word “management” and prefer the word “leadership.” It’s not a new idea, but one that dovetails effectively with the spirit of Full Spectrum Leadership.

What’s the difference between leaders and managers?

- Leaders take charge, make things happen, dream dreams, and then translate them into reality.
- The manager administers; the leader innovates.
- The manager focuses on systems and structure; the leader focuses on people.
- The manager relies on control; the leader inspires trust.
- The manager has a short-range view; the leader has a long-range perspective.
- The manager asks how and when; the leader asks what and why.
- The manager’s eye is on the bottom line; the leader’s eye is on the horizon.
- The manager imitates; the leader originates.
- The manager accepts the status quo; the leader challenges the status quo.
- The manager does things right; the leader does the right thing.

Perhaps baseball manager Casey Stengel put it best. He once said that the art of management consists of “getting credit for the home runs your players hit.”


I would submit that the art of leadership consists of giving your players the practice opportunity, the desire, the strategic vision, and the positively charged environment to perform with excellence season after season. 



## Clarifying admissions index scores

In the last issue of *CQ*, the story “CSU’s stretch goals tied to funding” discussed increasing the value of a CSU degree. CSU-Fort Collins has a goal to raise the average admission index score to 115 from the current 112. The minimum Freshman Admissions Index for CSU-Fort Collins is 101 and for CSU-Pueblo is 86.

View the Colorado Commission on Higher Education Admission Eligibility Index for Fall 2006-Fall 2010 at <http://www.state.co.us/cche/policy/newpolicies/i-partf-index.pdf>.

Access information on CSU’s Freshmen Admissions Index at <http://admissions.colostate.edu/icalc/index.cfm?cAct=map>. 

## ► NUMBERS

### Enrollment gains continue nationally for women and minority students

CSU’s fall enrollment numbers are now available on the Institutional Research website at <http://www.colostate.edu/Depts/OBIA/>, reflecting the largest freshman class in CSU history for the second year in a row and the most diverse CSU undergraduate population ever.

Nationwide, institutions are seeing a continuing trend of college-enrollment gains among female and minority students, says the U.S. Department of Education’s National Center for Education Statistics in an annual report released in June.

#### National enrollment

<b>3 times as fast as men’s</b>	Increase in women’s undergraduate enrollment since 1970
<b>60 percent</b>	Projected total enrollment of women in undergraduate programs by 2016
<b>112 percent</b>	Enrollment gains for women in graduate and professional education from 1976 to 2005
<b>57 percent</b>	Enrollment gains in postsecondary degree-granting institutions from 1976 to 2005
<b>269 percent</b>	Minority enrollment increase in graduate programs from 1976 to 2005
<b>331 percent</b>	Minority enrollment increase in professional programs from 1976 to 2005

**National fields of study**

<b>100 percent</b>	Increase in degrees earned in computer and information sciences at the associate-degree level (compared with a 25-percent rise overall in associate degrees)
<b>57 percent</b>	Increase in degrees earned in computer and information sciences at the master's-degree level (compared with a 34-percent increase overall in master's degrees)
<b>200 percent</b>	Increase in degrees earned in the health professions and related clinical sciences at the doctoral level (compared with a 14-percent rise in doctoral degrees overall)

**National faculty pay**

<b>35 percent</b>	Average inflation-adjusted salary increases for instructors (since 1979)
<b>24 percent</b>	Average inflation-adjusted salary increases for professors (since 1979)

*Source: U.S. Department of Education National Center for Education Statistics, "The Condition of Education 2007." Access the full report at <http://nces.ed.gov/pubs2007/2007064.pdf>.*

**CSU commits to faculty expansion**

Colorado State has funded the largest faculty expansion in modern history of the University over the past three years – a total of 77 tenure track lines, says Tony Frank, Colorado State University senior vice president and provost. “But there remains work to be done,” noted Frank. Frank says a one-year lag in hiring these positions coupled with a record-high enrollment has cut into the progress on student/faculty ratios. Additionally, the budget cuts of several years ago reduced tenured faculty to less than 950. “Despite the work to be done, we are optimistic,” says Frank. “The past three years represent only the start of a significant, multiyear investment trend in the most valuable aspect of any university: the faculty.”

<b>32</b>	Number of CSU tenure-track faculty lines (15 in FY06 and 17 in FY07)
<b>45</b>	New CSU tenure-track faculty lines included in the FY 09 budget
<b>8 percent</b>	Expansion of faculty lines over a period of several years when student enrollment growth was flat
<b>20 percent</b>	Progress toward accomplishing the CSU stretch goal of hiring 450 new faculty members in the next five years

## State falls in tech-worker rankings

Colorado dropped to No. 3 in the nation from No. 1 a year ago – surpassed by Virginia and Massachusetts – with the highest concentration of tech-industry workers as a percent of the private sector workforce. Until this year, Colorado had owned the high-tech distinction ever since the trade association AeA began publishing “Cyberstates,” the state-by-state report of the high-technology industry, 10 years ago.

### State status

<b>3</b>	Colorado's most recent national ranking in the concentration of high-tech workers
<b>1</b>	Colorado's ranking for the past nine years, until the 2007 report
<b>1,700</b>	Drop in high-tech jobs in Colorado, which is 1 percent, from 2004
<b>91 of every 1,000</b>	Workers in Colorado who held a high-tech job in 2003
<b>40</b>	Number of states in which tech employment gains occurred

### Jobs

<b>150,000</b>	Net jobs the high-tech industry added in 2006
<b>87,400</b>	Net jobs the high-tech industry added in 2005
<b>5.8 million</b>	Total number of high-tech industry jobs in United States in 2006

### Wages

<b>86 percent more</b>	Average wage that tech-industry workers receive compared with U.S. private sector workers
<b>\$75,500</b>	Average wage the tech industry paid workers in 2005

### Industry

<b>13,300</b>	Number of jobs the communications services sector lost in 2006 compared to a loss of 37,200 in 2005
<b>88,500</b>	Number of jobs the software services industry added in 2006, up for the third year in a row
<b>66,300</b>	Number of jobs the engineering and tech services industry added in 2006, an all-time high

Source: AeA report “Cyberstates 2007” based on U.S. Bureau of Labor Statistics data

## ► QUOTABLE

*“Let’s get rid of management. People don’t want to be managed. They want to be led. Whoever heard of a world manager? World leader, yes . . . The carrot always wins over the stick. Ask your horse. You can lead your horse to water, but you can’t manage him to drink. If you want to manage somebody, manage yourself. Do that well and you’ll be ready to stop managing. And start leading.”*

—Joanne Maguire, executive vice president for Lockheed Martin Space Systems, quoting from a United Technologies Corporation ad in the Wall Street Journal in her remarks at a CSU executive luncheon

*“We have some serious challenges ahead. Companies of all sizes continue to have problems recruiting highly qualified and educated individuals. This problem is the lack of American kids enrolling in and graduating from math, science, and engineering programs, and a U.S. high-skilled visa system that is broken.”*

—William T. Archey, president and CEO of AeA, on the “Cyberstates 2007” report, which provides a state by-state overview of the high-tech industry that ranked Colorado third in the United States in the number of private-sector high-tech jobs

*“It’s the elephant in the living room. The falls have not been dramatic, but the continued erosion of our competitive position is causing us some concern.”*

—Tom Clark, executive vice president of the Metro Denver Economic Development Corp., about the lack of funding for higher education at the root of Colorado’s falling high-tech stature

*“Colorado has an undercounted population of information-technology workers. I get very disappointed and discouraged when reports like this come out. We really need to count all IT workers, no matter what industry they’re in.”*

—Su Hawk, executive director of the Colorado Software and Internet Association, about the “Cyberstates 2007” report, which doesn’t include a growing number of high-tech jobs in the aerospace or financial sector

See related story, “State falls in tech-worker rankings,” on page 35.